



Workshop for Sheung Yue River Catchment

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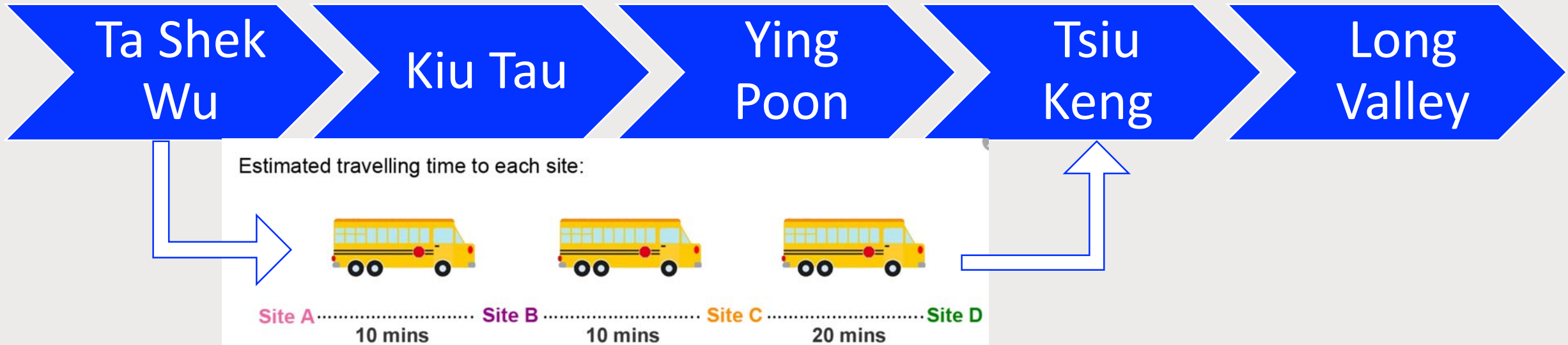
Sheung Yue River

Wise use 引水灌田

- A. About the field study route and field study sites
- B. Relationship between stream water quality and agriculture
- C. How to collect data on stream water quality



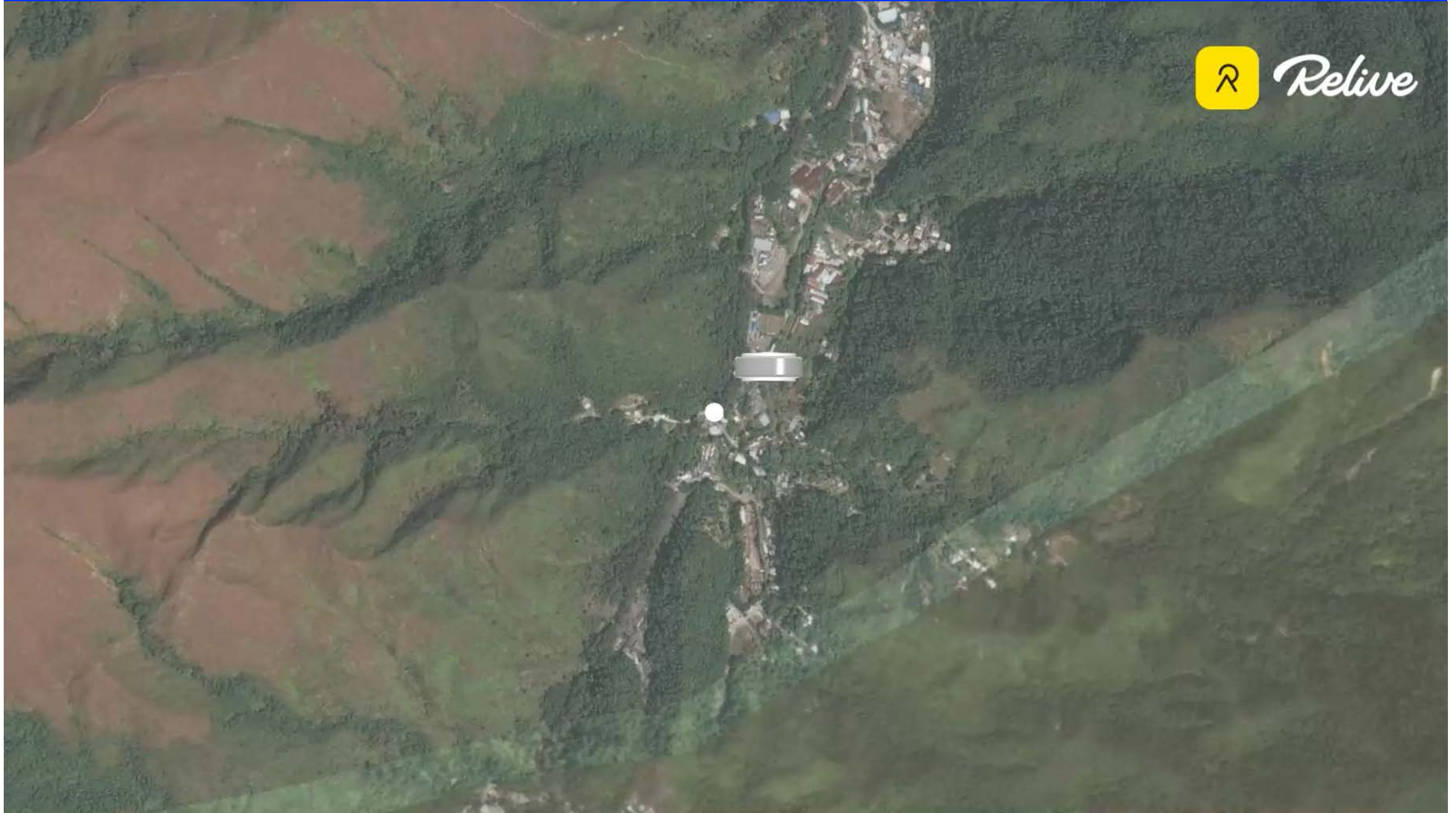
A. About the field study route and field study sites



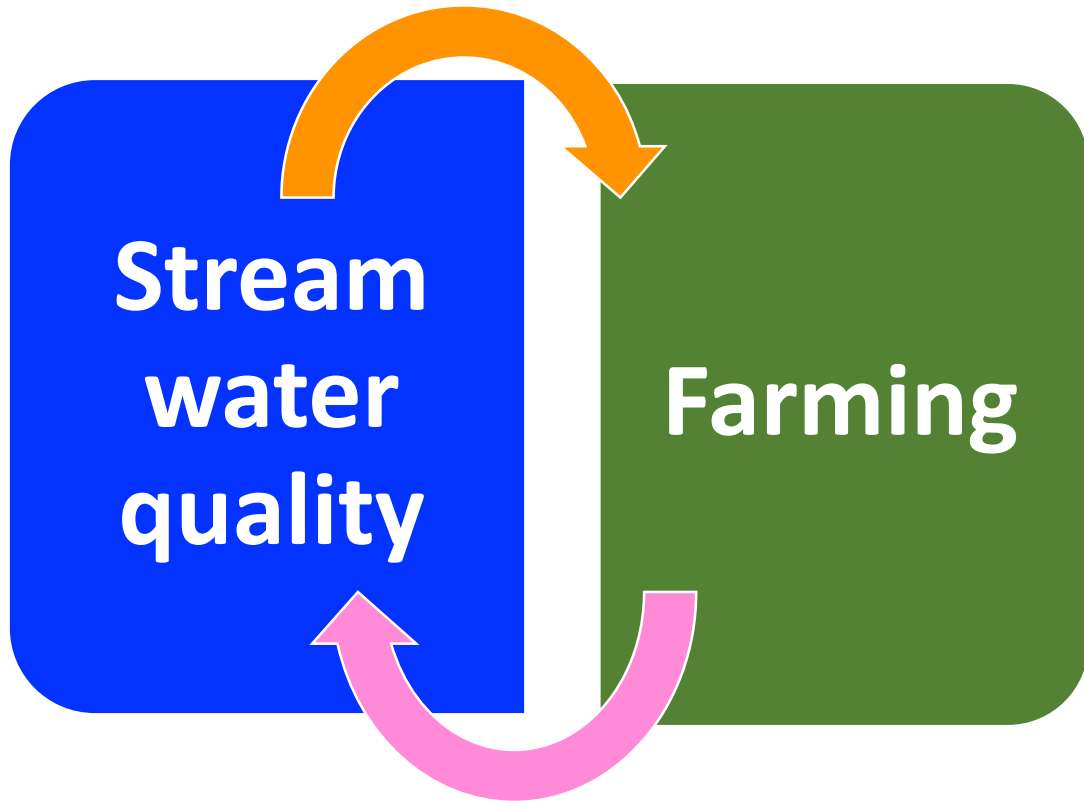
A. About the field study route and field study sites



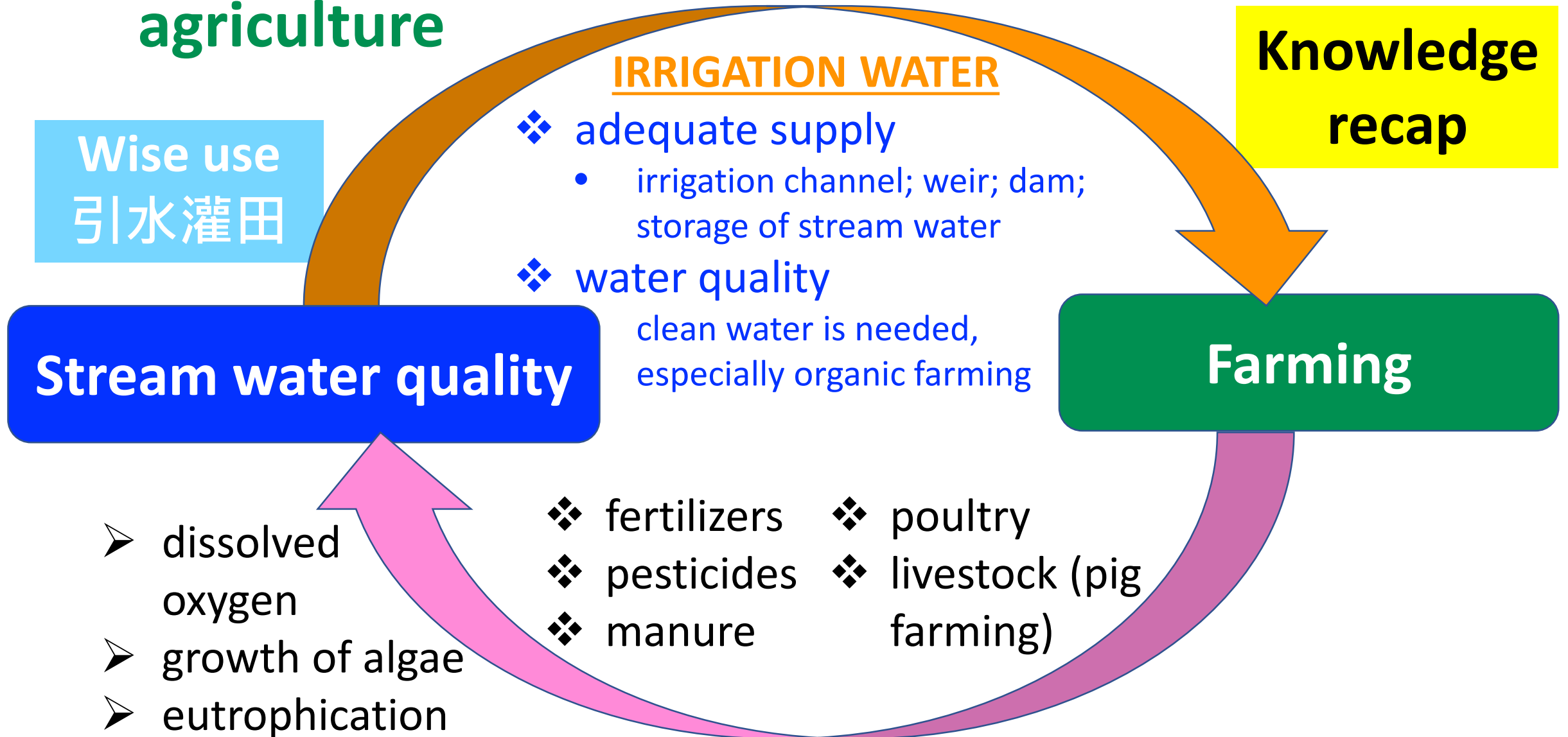
About the field study route and field study sites



B. Relationship between stream water quality and agriculture



B. Relationship between **stream water quality** and **agriculture**



B. Relationship between **stream water quality** and **agriculture**

Enquiry question	Find out the relationship between stream water quality and agriculture in Sheung Yue River.		
Data collection	Stream water quality		Agriculture
	Observations <ul style="list-style-type: none">• Floating matter• Green algae• Sewage fungus• Smell• Water colour• Turbidity	Chemical & biological properties <ul style="list-style-type: none">• Acidity• Ammonia• Nitrate• E. coli	Land use type <ul style="list-style-type: none">• Around• Upstream• Type of farming

B. Relationship between stream water quality and agriculture



B. Relationship between stream water quality and agriculture

Stream water quality

Ta Shek
Wu

Agricultural land use



B. Relationship between stream water quality and agriculture

Kiu Tau

Stream
water
quality

Agricultural
land use

Domestic

- urban storm water run off
- sewage
- contamination

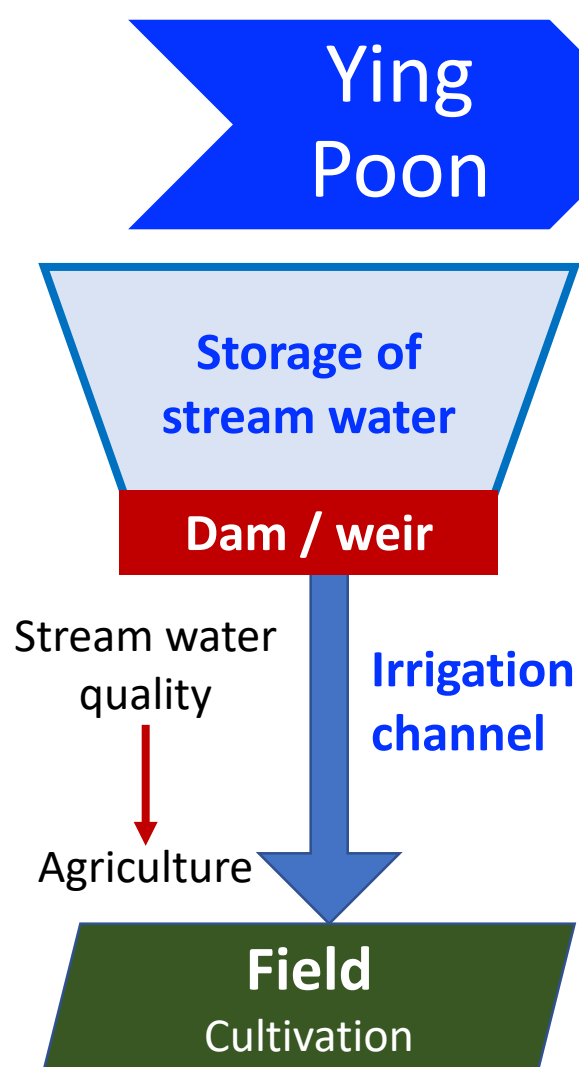
Industry

- waste discharge
- chemical waste
- toxic materials
- dirty water back to stream

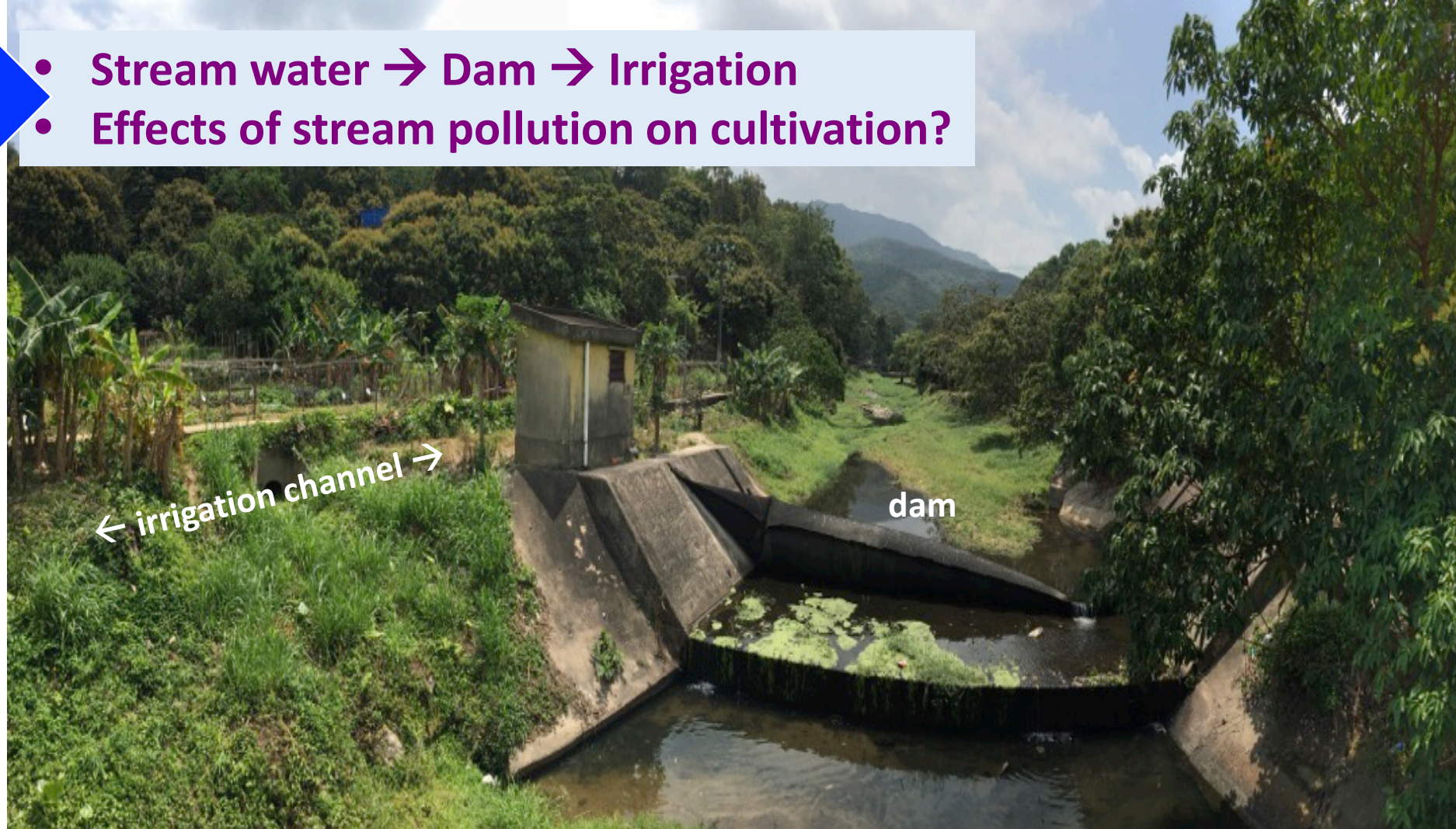
Compare
turbidity, colour, ...



B. Relationship between **stream water quality** and **agriculture**



- Stream water → Dam → Irrigation
- Effects of stream pollution on cultivation?



B. Relationship between stream water quality and agriculture

Stream water quality



Agricultural weir at Ying Pun (with overflow)

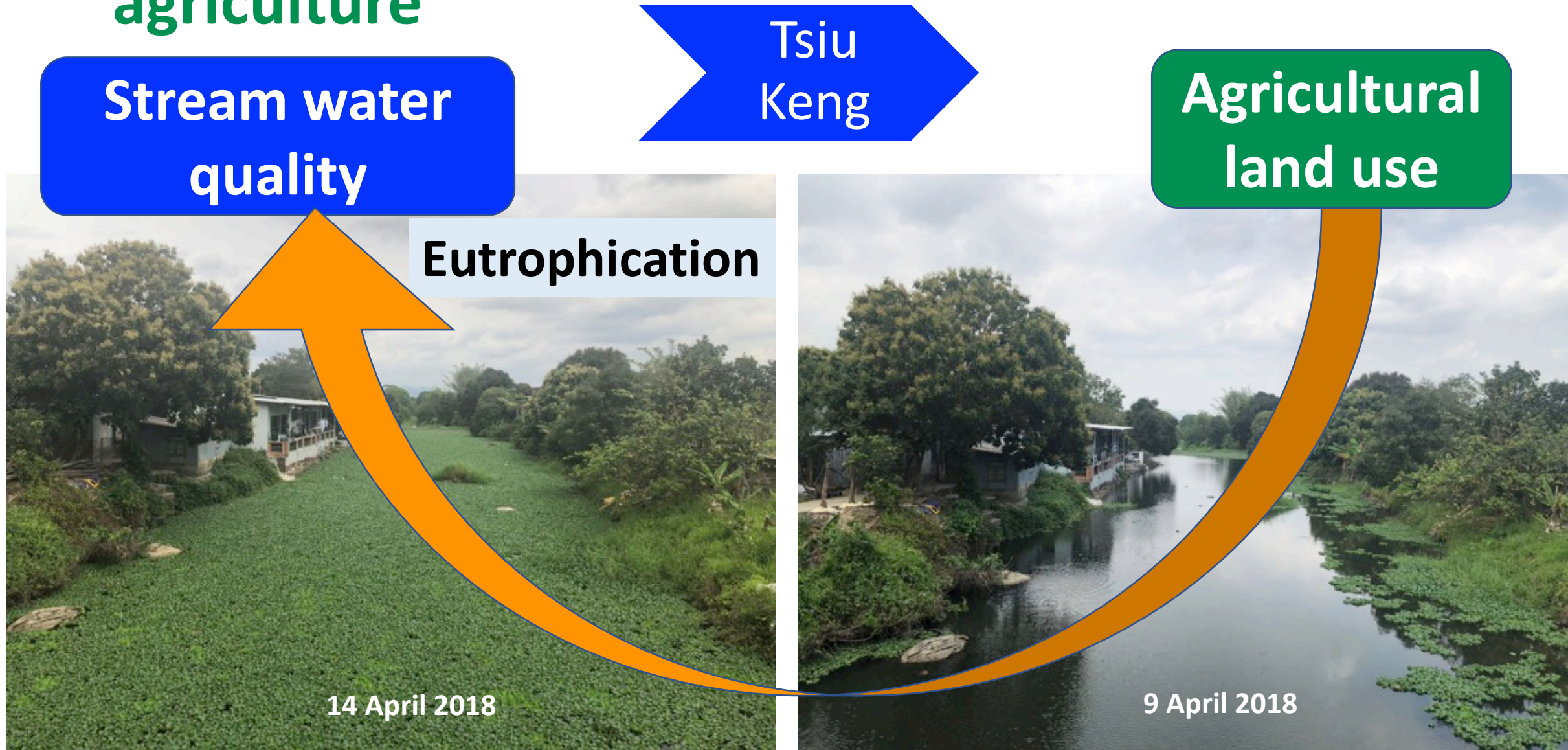
Ying Poon



Agricultural land use



B. Relationship between **stream water quality** and **agriculture**



B. Relationship between stream water quality and agriculture

Stream water quality

Tsiu
Keng

Agricultural
land use



Eutrophication

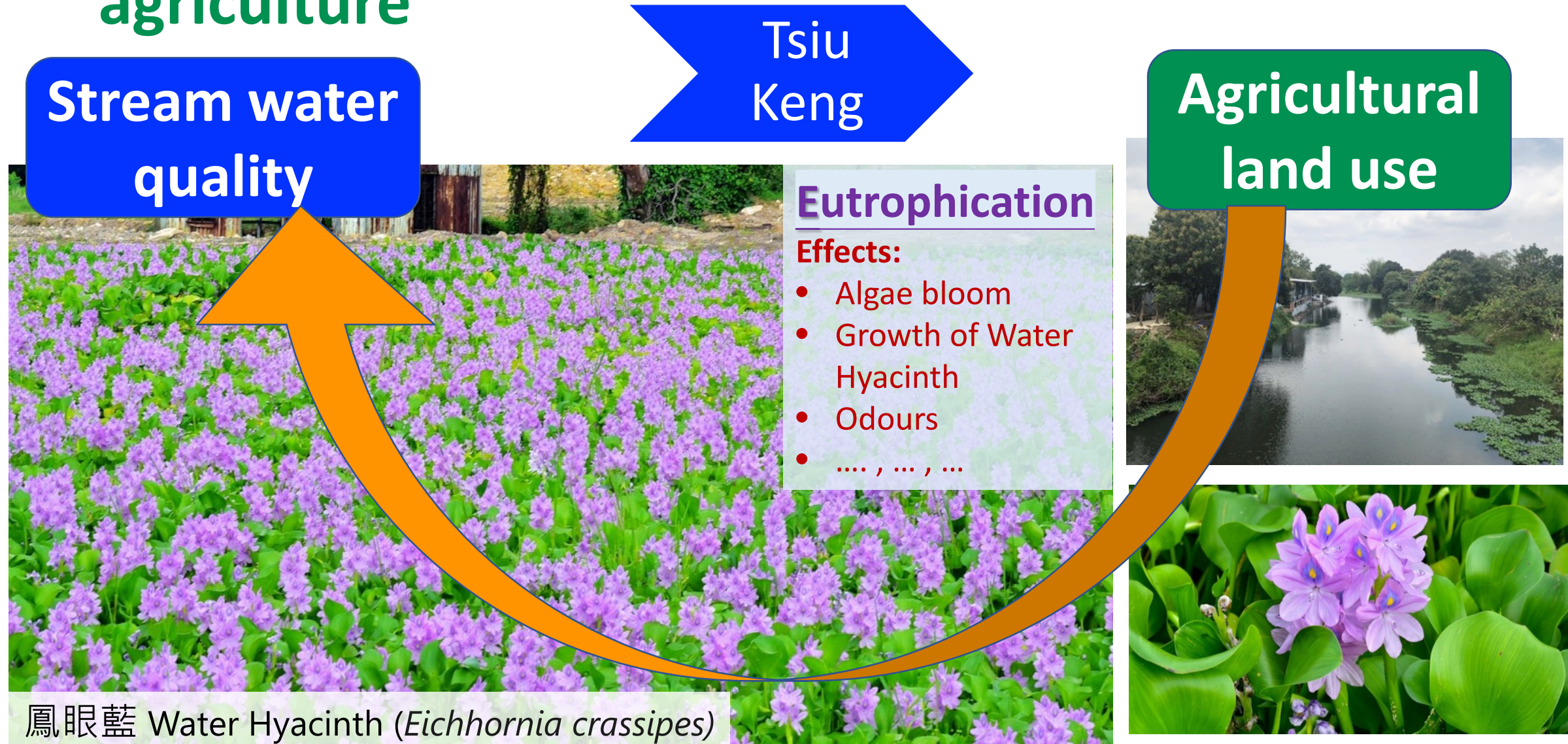
Causes:

- Use of fertilizer
- Discharge of waste water into stream
- Reduction of self-purification capacity

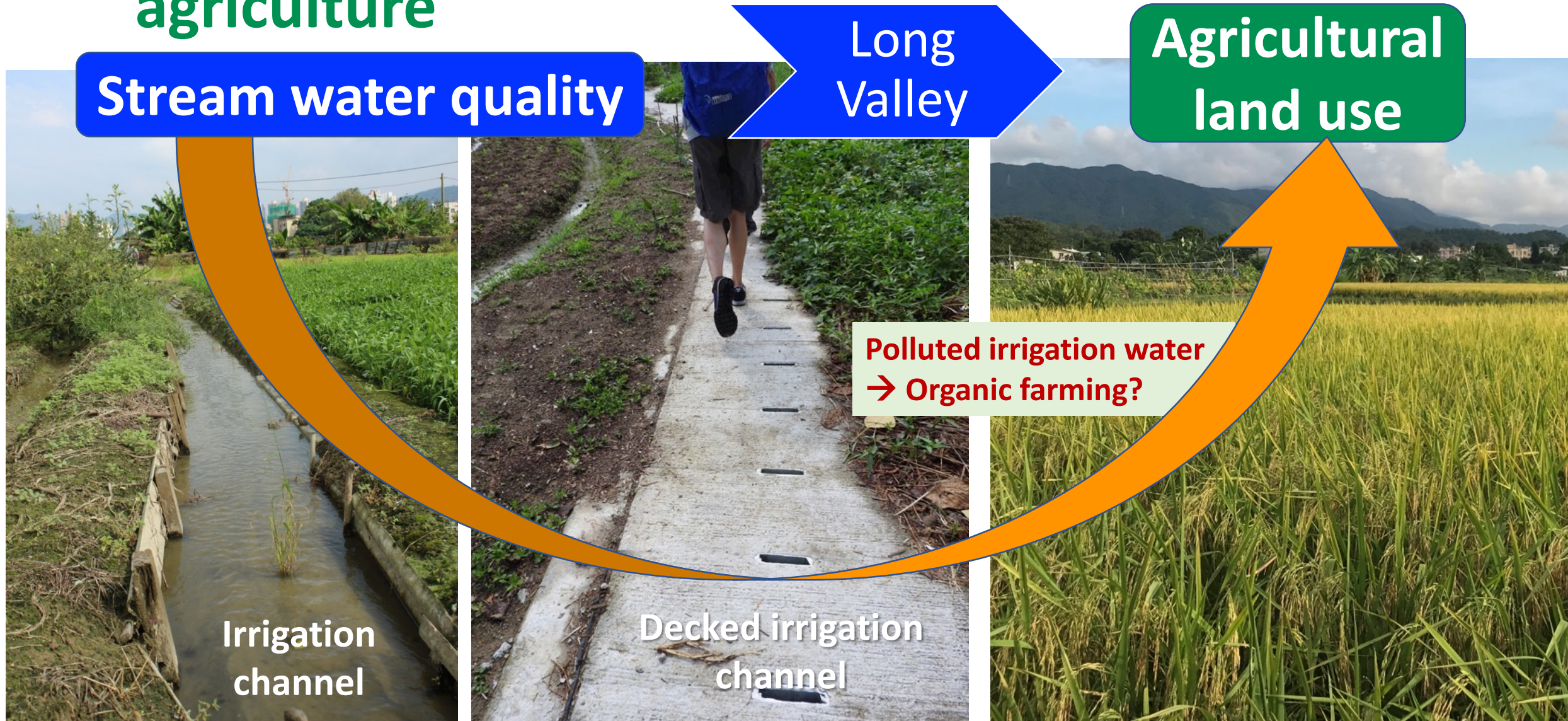
28 April 2018

鳳眼藍 Water Hyacinth
(*Eichhornia crassipes*)

B. Relationship between stream water quality and agriculture



B. Relationship between stream water quality and agriculture



B. Relationship between stream water quality and agriculture

Stream water quality

Long Valley

Agricultural land use



B. Relationship between stream water quality and agriculture

Stream water quality

Long
Valley

Agricultural land use

Polluted irrigation water →
Organic farming?

Interview with an organic farmer in Long Valley



黃七娣 主席

電話：852-6024 3281

<http://ntfarmer.org>

地址：上水燕崗村

北區蔬菜批發商協會副會長

北區臨時農產品市場諮詢委員

傳真：2345 0117

Decked irrigation
channel

Organic
farming



C. How to collect data on **stream water quality**

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Temperature



pH



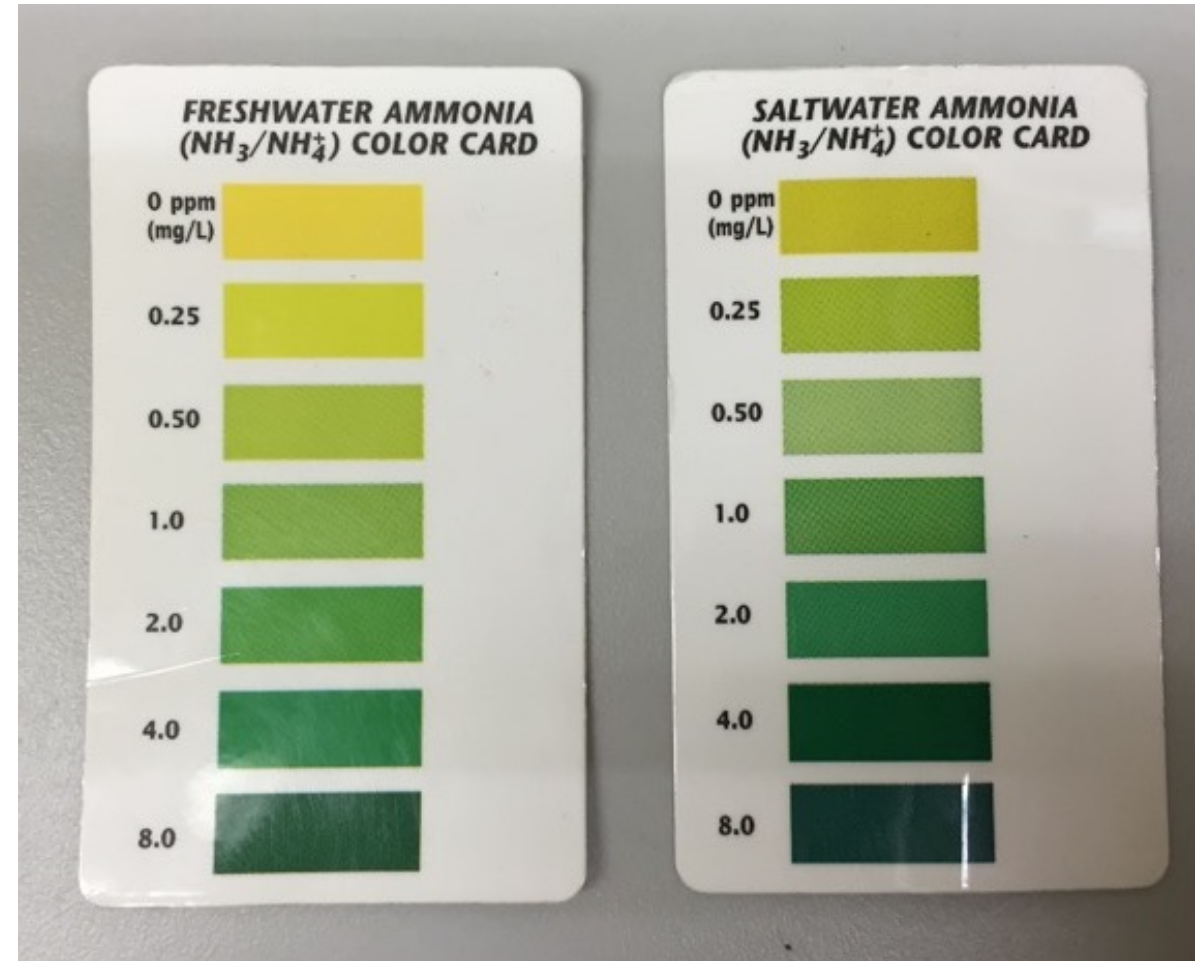
Dissolved Oxygen



Ammonia / Nitrite / Nitrate



Ammonia / Nitrite / Nitrate



Salinity / Total Dissolved Solid (TDS) / Electrical conductivity



Multi-parameters benchtop meter



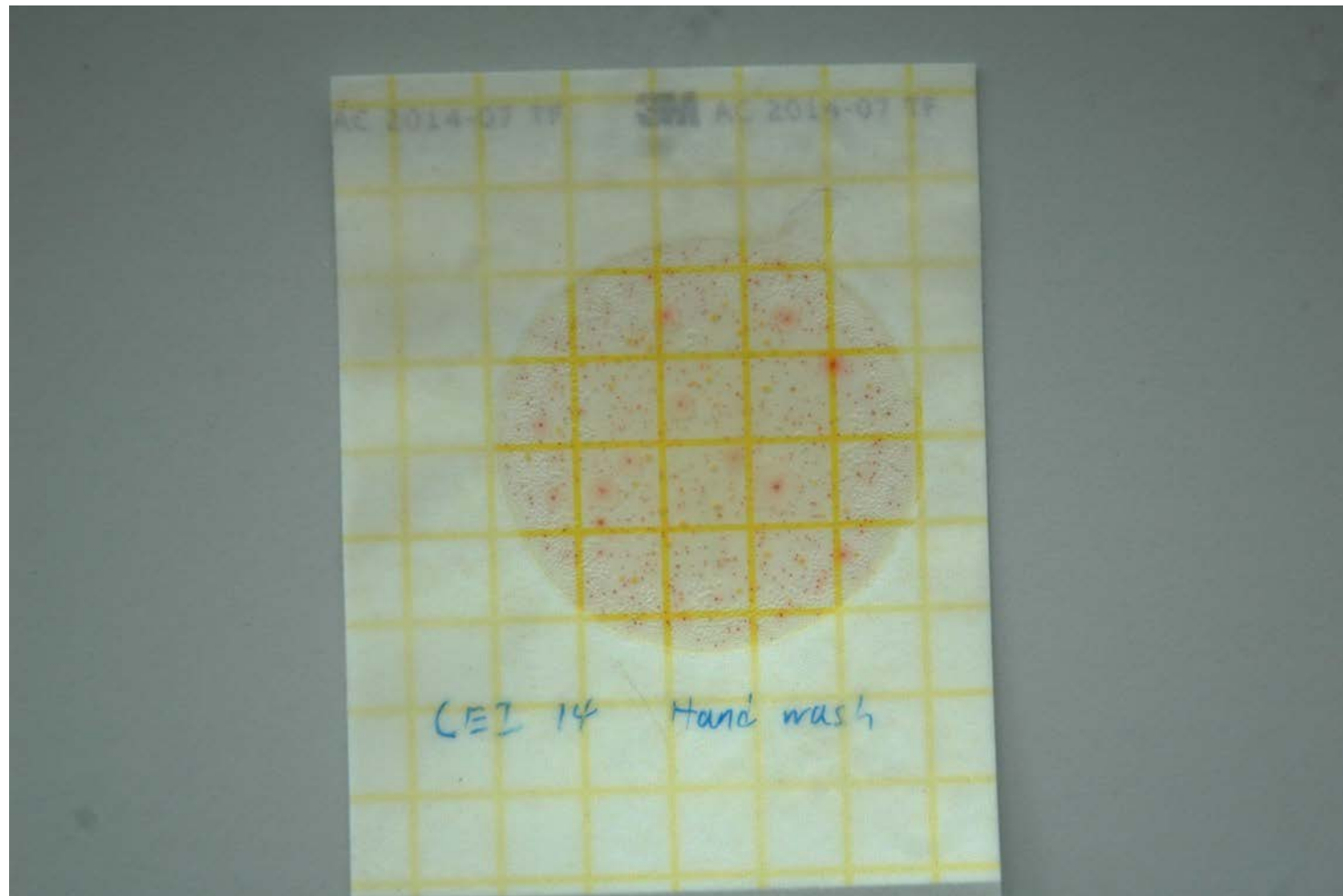
Turbidity / Nickel etc.

Spectrophotometers



Acid Demand	COD MR	Nitrite
Alkalinity P	COD HR	Nitrogen Total
Alkalinity Total M	Copper	Oxygen Saturation
Alkalinity	Cyanide	Ozone
Aluminium	Cyanuric Acid	pH Value
Ammonia	DEHA	Phenols
Ammonia LR	Fluoride	Phosphate Total
Ammonia HR	Hardness Total	Phosphate
Arsenic	Hazen	Phosphonate
Boron	Hydrazine	Potassium
Bromine	Hydrogen Peroxide	Silica
Cadmium	Iodine	Sulphate
Absorbance	Iron	Sulphide
Monochloramine	Formaldehyde	Sulphite
Chloride	Iron TPTZ	Detergents
Chlorine	Lead	Suspended Solids
Chlorine (total)	Manganese	TOC
Chlorine Dioxide	Molybdate	Turbidity
Chromium	Nickel	Urea
CODLR	Nitrate	Zinc

Escherichia coli / Total bacteria



Heat exhaust behind the incubator
When the incubator is running, this
window must be kept OPEN, and do NOT
close the window blind.
散熱出口置於培養機背面。
培養機運作時，必須保持此窗門打開，
及不要關上窗簾。







- Temperature
- Salinity
- pH
- Dissolved Oxygen
- *Escherichia coli*
- Total bacteria
- Ammonia
- Nitrate
- Total Dissolved Solid
- Electric conductivity
- Turbidity
- Nitrite
- Nickel
-

In the geography education of secondary schools:

- Investigating whether the river is clean/ potable is **meaningless**
- **Learning happens in**
 - Deciding the methodology & sampling sites
 - Testing processes
 - In analyzing the results
- **No. of parameters tested depends on:**
 - Needs
 - Time & Cost
 - Student ability etc.

Thank
You

